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Chief, Rulemaking, Directives and Editing Branch
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, DC 20555-0001

Re: New Mexico Environment Department Comments On NRC's Draft Generic Environmental Impact Statement (GEIS) For *In-Situ* Leach (ISL) Uranium Recovery Facilities

Dear Branch Chief:

Enclosed please find the comments of the New Mexico Environment Department (NMED) on the U.S. Nuclear Regulatory Commission's (NRC) proposed Draft Generic Environmental Impact Statement (GEIS) For *In-Situ* Leach (ISL) Uranium Recovery Facilities. In general, the NMED opposes the use of a GEIS because of our fear that it will limit the ability of individuals to have meaningful involvement in the federal approval process for these facilities. This is in keeping with Governor Bill Richardson's July 31, 2007 letter to NRC Chairman Dale Klein on this issue.

NMED appreciates the willingness of the NRC to solicit state input on this issue and hopes that this willingness will continue through an agreement to conduct individual Environmental Impact Statements for specific license applications in the State of New Mexico.

A. General Comments

A GEIS often is used as a tool in the "tiering" process to serve as a master document whereby subsequent, site specific environmental reviews only amount to an environmental assessment with heavy reliance on the "generic" document. This means that instead of performing a comprehensive, in-depth environmental review at each site in New Mexico for each license application, the Nuclear Regulatory Commission (NRC) would only conduct an environmental assessment and rely on the GEIS for a large portion of its site specific analysis. Given the

unique environmental, geographical, cultural, historical, economic, and regional aspects of New Mexico, it is contrary to the goals and purposes of the National Environmental Policy Act (NEPA) for the NRC to use a GEIS approach in this instance.

The New Mexico Environment Department (NMED) recommends that the NRC conduct a site-specific EIS for all proposed ISL uranium recovery operation applications for New Mexico based for the following reasons:

1. Many of the impact significance levels range from “Small to Large”, particularly all groundwater related categories, depending on site-specific conditions. In New Mexico, impacts during operation, restoration, and decommissioning would be “Large” based on the fact that the aquifer (Westwater Canyon member) is a potential drinking water source and very few, if any ISL sites have been restored to pre-operational conditions. New Mexico relies on groundwater for 90% of its drinking water supply and all groundwater in New Mexico is protectable and is a potential drinking water supply if it contains less than 10,000 mg/l total dissolved solids (TDS). A significance level of “Large” will result in a “finding of significant impact” in the NEPA evaluation.
2. The Grants uranium district contains thousands of exploration holes, many of which may not have been properly abandoned and extensive mine workings that connect large subsurface areas within the district, both of which reduce the integrity of aquitards in isolating ore bearing aquifers from others and providing a conduit for vertical excursions. Each application would require a site-specific review to determine the integrity of the aquitard(s) in a given location and would result in a “finding of significant impact” in the NEPA evaluation, if they exist.
3. The majority of uranium resources in New Mexico are located in the Grants Mineral Belt in the northwestern portion of the State. This area includes large portions of “Indian Lands.” Consequently, any proposed ISL uranium recovery and processing operations in New Mexico will pose unique cultural and environmental justice issues that the GEIS process will not adequately address. Given the minority and low income population in New Mexico, environmental justice issues will be involved with most, if not all applications. Therefore, a full environmental justice analysis will need to be performed for every application as stated on page 6-19 lines 17-18 and site-specific information will be needed which may change conclusion of GEIS that minority or low-income populations in the area would receive disproportionately high and adverse environmental of health impact from the ISL facility activities.
4. Potential impacts on New Mexico’s sovereign Tribes and Pueblos will undoubtedly result in a “finding of significant impact” in the NEPA evaluation, which will require the NRC to perform an Environmental Impact Statement (EIS). In this context, the NRC should adopt the full EIS process for reviewing any proposed activity that will occur at specific sites within New Mexico. In addition, a generic approach is contrary to the principles of government-to-government consultation with the many sovereign Native American Tribes and Pueblos in New Mexico. Some thirty-five Native American tribes claim cultural affiliation with historical properties in New Mexico, including archaeological

sites, landscapes, traditional cultural properties and sacred sites. In many cases, traditional Native American cultural properties consist of cultural landscapes and special landforms with spiritual relationships that could be affected by this undertaking having long-term adverse impacts or potentially detrimental effects to the very existence of the people.

5. The proposed GEIS is contrary to the State of New Mexico's commitment to full public participation in its permitting processes in which each permit is evaluated on a case-by-case basis. This individual review is particularly important for uranium operations due to the extensive history of environmental degradation and public impacts as a result of past uranium mining and milling practices, the varying hydrologic, geologic and ecologic conditions of each particular site, and cultural resources unique to New Mexico. A full EIS process is also consistent with the NRC's decision to complete an EIS for new nuclear reactor applications rather than following a GEIS process.

Furthermore, there are a number of concerns over air quality issues that should be addressed including:

1. The use of baghouses for air pollution control would necessitate a pre-application meeting with the New Source Review Permit Section of the Air Quality Bureau prior to any construction or operational activities to discuss possible permitting options.
2. It is stated in the GEIS that generators will be used at facility. If these units are used as back-up energy supply, records should be kept of the hours of operation of the generator. An application for a construction permit must be submitted for stand by generators used 500 hours per year or more.
3. To further ensure air quality standards are met, applicable local or county regulations requiring noise and/or dust control must be followed; if none are in effect, controlling construction-related air quality impacts during projects should be considered to reduce the impact of fugitive dust and/or noise on community members.
4. Areas disturbed by project activities, within and adjacent to the project area, should be reclaimed to avoid long-term problems with fugitive dust. During the construction activities, dust control measures should be taken to minimize the release of particulates. Long-term dust control can be achieved by paving, re-vegetating, or using dust suppressants on disturbed areas following construction.
5. All asphalt, concrete, quarrying, crushing, and screening facilities contracted in conjunction with the proposed project must have current and proper air quality permits. For more information on air quality permitting and modeling requirements, please refer to 20.2.72 NMAC.

NRC should note that an operator of a proposed ISL facility must also obtain a water right or appropriation permit from the Office of the State Engineer in order to extract water from the ground.

B. Specific Comments

1. Page xli, Groundwater Impacts, Operation: The alteration of ore body aquifer chemistry significance level of “Small” during operation is too low. Small to Large would be more appropriate due to the fact that two of the three reasons listed for “Small” are not valid in New Mexico; the aquifer would not be a potential drinking water source and the aquifer would be expected to be restored within statistical range of preoperational baseline quality during the restoration period. All groundwater in New Mexico is protectable and could be a potential drinking water supply if it contains less than 10,000 mg/l total dissolved solids (TDS) given that New Mexico relies on groundwater for 90% of its drinking water supply. Groundwater within the Grants Mining District is known to contain less than 10,000 mg/l TDS. Although it is a goal to restore groundwater to preoperational conditions, this has not been successfully accomplished at many, if any ISL facilities. Therefore, alterations of ore body aquifer chemistry should be revised to Moderate to Large.
2. Page xlii, Groundwater Impacts, Decommissioning: The groundwater impact significance level of “Small” during decommissioning is too low. Small to Large would be more appropriate, given that ongoing contamination issues may be significant at sites that have failed to achieve aquifer restoration of water quality.
3. Page 1-16, Section 1.6.3.4: NMED would like to clarify that it is the New Mexico “Environment” and not “Environmental” Department. While NMED was established in 1991, its predecessor agency, the New Mexico Environmental Improvement Division (NMEID) existed from 1977 through 1991.
4. Page 1-23, Section 1.7.5.4: As a clarification, the NMED authority comes from Title 20, Chapter 6, Part 2 of the New Mexico Administrative Code.
5. Pages 1-23 to 1-24, Section 1.7.5.4: Before the federal appeals court in Denver, there is an ongoing appeal, which will affect the jurisdictional authority for regulation of ISL facilities in Indian Country. Note that on lines 30-34, page 3.5-1, this issue is mentioned as an ongoing jurisdictional dispute in the checkerboard area.
6. Page 2-11, Section 2.3.1.1: The Office of the State Engineer has promulgated regulations on well completion in confined conditions (Westwater Canyon member of the Morrison formation) that must also be adhered to.
7. Page 2-14, Section 2.3.2: The State of New Mexico requires an operator to obtain a Discharge Permit for evaporation ponds used in the management of waste water.
8. Page 2-18, Section 2.4.1.3: The Grants uranium district has thousands of exploration holes, many of which may not have been properly abandoned and extensive mine

workings that connect large areas within the district, thus reducing the integrity of aquitards in isolating ore bearing aquifers from others and providing a conduit for vertical excursions.

9. Page 2-19, Section 2.4.1.4; Page 8-6, Section 8.3.1.2:

- a. The setting of upper control limits (UCLs) under NMED authority would have to consider water quality standards in 20.6.2.3103 NMAC, such that the selected UCLs do not exceed the numerical standards, if background is determined to be lower than applicable standards. NMED agrees with a contingency plan that identifies water quality changes as early as possible, but the UCLs should follow state regulations to ensure compliance with numerical standards.
- b. NMED does not agree that an excursion should be defined when two or more contaminants of concern (COCs) are discovered above the UCLs in a given monitoring well. NMED would consider an excursion if a single COC is discovered above the UCLs in a single monitoring well.
- c. Line 2 and 3 states “If an excursion cannot be recovered, the licensee may be required to stop injection of lixiviant into a well field”. NMED considers this an illegal discharge and would require the operator to cease injection immediately.

10. Page 2-29, Section 2.5.4: Line 44 refers to “class-of-use”. New Mexico does not classify groundwater. The New Mexico Water Quality Act protects all groundwater that contains less than 10,000 mg/l TDS.

11. Page 2-31, Section 2.6: Line 29 should read “...lands are returned to pre-production...”.

12. Page 2-41, Section 2.10: This section refers to 10 CFR Part 40, Appendix A, Criterion 9 for establishing financial surety, but does not provide specifics for ISL facilities. NMED suggests the financial surety be based on the extraction of a minimum of 10 pore volumes (page 2-29, line 1-3).

13. Page 2-48, Section 2.11.5:

- a. The NRC should mention the potential or give an example of a site that may require Alternate Concentration Limits (ACLs) because aquifer restoration goals were not successfully achieved.
- b. Line 17 does not list other exceedences greater than baseline range in Table 2.11-4 – manganese and TDS.

14. Page 2-49, Section 2.11.5: Lines 24-25 states “Davis and Curtis (2007) generally concluded that for the sites and data they examined, aquifer restoration took longer and required more pore volumes than originally planned.” This statement along with the statement on page 2-51, lines 4-9, suggest that restoration of groundwater quality to

baseline conditions is achievable given removal of a sufficient number of pore volumes. These conclusions are based on a limited number of sites and are inconsistent with the U.S. Geological Survey Study on ISL restoration issued in January 2007 (NUREG/CR-6870). NMED recommends the NRC evaluate a larger number of sites, including ISL sites in agreement states such as Texas, in order to evaluate the success rate of restoration of groundwater quality to baseline conditions.

15. Page 3.5-4, Section 3.5.2: The NRC should consider that the first uranium mill that becomes operational in the Grants uranium district may be used by other uranium mines in the area as a destination for ore and fluids processing. Therefore, local transportation and pipeline infrastructure to the mill may be much more extensive in addition to the interstate shipment of yellowcake from the mill.
16. Page 3.5-6, Section 3.5.3: Line 26 states “The sandstone-type uranium deposits in the Grants district are generally in a geologic setting favorable for exploitation by ISL milling”. It must be noted that extensive conventional mining resulting connection of large subsurface areas and inadequate plugging of exploration holes has compromised these favorable conditions for ISL milling in portions of the Grants uranium district.
17. Page 3.5-18, Section 3.5.4.3.1:
 - a. The NRC should clarify whether the Mesaverde Group Aquifer includes the Tres Hermanos A, B, and C, which are sandstones within the Mancos Shale. It should also be noted that the Tres Hermanos units have been used for livestock watering.
 - b. The NRC should note that pumping from underground mine workings has lead to depressurization of aquifers (e.g., Westwater Canyon member of the Morrison Formation) in the Ambrosia Lake Area. The intra-aquifer connections from underground mine workings and improperly abandoned exploration borings have resulted in a deterioration of the integrity of aquitards to isolate aquifers from one another.
 - c. The NRC should note that the Dakota sandstone is used by the Moquino Mutual Domestic Water Users Association near Bibo and Seboyeta east of Mt. Taylor.
18. Page 3.5-20, Section 3.5.4.3.3: The NRC should note that the Ambrosia Lake vicinity contains Westwater Canyon member of the Morrison Formation ground water that may be used in the future as a water supply.
19. Pages 3.5-17 to 3.5-21, Section 3.5.4.3: This section has a mix of regional and local ground water properties. However, the local ground water resources are not comprehensive in terms of existing and potential aquifers in the Grants uranium district.
20. Page 3.5-21, Section 3.5.4.3.3: The NRC should note that groundwater quality in the Grants uranium district varies greatly due to extensive mining in the area and associated dewatering activities.

21. Page 3.5-62, Section 3.5.10.1; Table 3.5-16: The NRC should compare the population estimates with the State Demographer's results to ensure the best estimates of New Mexico population. Using the 2000 U.S. census data results in an underestimate of the current population. Go to the web site: <http://www.unm.edu/~bber/demograp2.htm>
22. Page 3.5-77, Section 3.5.11: NMED is unclear why prior mining and milling are not considered in background radiological conditions.

The total effective dose equivalent is the total dose from external sources and internal material released from licensed operations. Doses from sources in the general environment (such as terrestrial radiation, cosmic radiation, and naturally occurring radon) are not included in the dose calculation for compliance with 10 CFR Part 20, even if these sources are from technologically enhanced naturally occurring radioactive material (TENORM), such as pre-existing radioactive residues from prior mining (Atomic Safety and Licensing Board, 2006), lines 31-36.

23. Page 4.5-10, Section 4.5.4.2; Page 4.5-11, Section 4.5.4.2.2: Vertical excursions may be more prevalent in New Mexico due to the aquitards compromised ability to limit migration due to extensive mine working connections and inadequate plugging of exploration borings.
24. Page 4.5-13, Section 4.5.4.2.2.2, line 42: same comment as #12.
25. Page 4.5-15, Section 4.5.4.2.2.3: The NRC should note that New Mexico has primacy from the United States Environmental Protection Agency (EPA) for the Underground Injection Control program.
26. Page 8-3, Section 8.3.1.1: This section discusses establishing pre-operational baseline conditions, but does not provide details on how it is calculated. NMED suggests, at a minimum 3 pre-operational groundwater conditions be established: 1) non-mineralized area; 2) reduced portion of the ore body; and 3) oxidized portion of the ore body.
27. Page 9-2, Section 9: Line 36 states that NRC will conduct tribal consultation with the Navajo Nation for potential cultural and resource impacts, but fails to list other tribal entities such as Acoma Pueblo, Zuni Pueblo, Hopi, and Laguna Pueblo.

C. Other Considerations

All surface water discharges from in-situ leach and related facilities require National Pollutant Discharge Elimination System (NPDES) permit coverage. In New Mexico, NPDES permits are issued by the EPA. Three distinct types of activities at these facilities require NPDES permit coverage under, potentially, three different NPDES permits: individually drafted NPDES permits

for discharges of process wastewaters; NPDES multi-sector general storm water permit coverage for discharges of storm water from mining and processing areas (haul roads, access roads, railroads, conveyor belts and associated areas, equipment storage and maintenance yards, processing buildings and structures, and inactive areas, etc.); and NPDES construction general storm water permit coverage for all construction activities, including exploration, which results in the disturbance of ≥ 1 acre. Sampling requirements (and effluent limits if applicable) are defined in two of the above NPDES permits (EPA is currently in the process of developing effluent limits for construction activities).

EPA requires NPDES Construction General Permit (CGP) coverage for storm water discharges from construction projects (common plans of development) that will result in the disturbance (or re-disturbance) of one or more acres, including expansions, of total land area. Among other things, this permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared for the site and that appropriate Best Management Practices (BMPs) be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants (primarily sediment, oil & grease and construction materials from construction sites) in storm water runoff from entering waters of the U.S. This permit also requires that permanent stabilization measures (revegetation, paving, etc.), and permanent storm water management measures (storm water detention/retention structures, velocity dissipation devices, etc.) be implemented post construction to minimize, in the long term, pollutants in storm water runoff from entering these waters. In addition, permittees must ensure that there is no increase in sediment yield and flow velocity from the construction site (both during and after construction) compared to pre-construction, undisturbed conditions (see Subpart 10.C.1)

EPA requires that all "operators" (see Appendix A) obtain NPDES permit coverage for construction projects. Generally, this means that at least two parties will require permit coverage. The owner/developer of the construction project who has operational control over project specifications, the general contractor who has day-to-day operational control of those activities at the site, which are necessary to ensure compliance with the storm water pollution plan and other permit conditions, and possibly other "operators" require appropriate NPDES permit coverage for these projects.

In addition, USEPA requires NPDES Storm Water Multi-sector General Permit (MSGP) coverage for facilities that engage in "industrial activities" as defined at 40 Code of Federal Regulations Part 122.26(b)(14). Uranium in-situ leach projects meet this definition (specifically 40 CFR Part 122.26(b)(14)iii, Standard Industrial Classification code 1094 covered under MSGP Sector G – Ore Mining and Dressing), and require appropriate NPDES permit coverage prior to beginning operations.

Among other things, this permit also requires that a SWPPP be prepared for the site and that appropriate BMPs be installed and maintained to prevent, to the extent practicable, pollutants in storm water runoff from entering waters of the U.S. A SWPPP should include such things as:

1. A description of potential pollutant sources which includes such things as a site map, an identification of the types of pollutants that are likely to be present in storm water discharges, an inventory of the types of materials handled at the site that potentially may be

exposed to precipitation, a list of significant spills and leaks of oil, toxic or hazardous pollutants, sampling data, a narrative description of the potential pollutant sources from specific activities at the facility (i.e., pumping operations, road construction, raw material storage and handling, material transportation, fueling and other equipment maintenance), and identification of specific potential pollutants (i.e., dust, total suspended solids, total dissolved solids, turbidity, pH, nitrates, oil, grease, ethylene glycol, heavy metals, radionuclides, and others); and

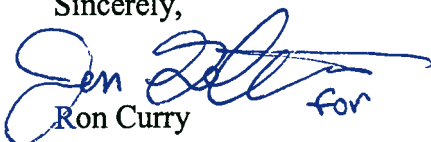
2. A description of appropriate measures and controls which includes the type and location of existing and proposed non-structural and structural BMPs selected for each of the areas where industrial materials or activities are exposed to storm water. Non-structural and structural BMPs to be described and implemented include such things as good housekeeping, preventive maintenance, spill prevention and response procedures, periodic inspections, employee training, record keeping, non-storm water evaluations and certifications, sediment and erosion control, as well as implementation/maintenance of traditional storm water management practices (i.e., sediment/settling ponds, check dams, silt fences, straw bale barriers, perimeter berms, runoff diversion structures), where appropriate. The MSGP also requires preparation and implementation of a reclamation plan for the site.

Finally, EPA requires individual NPDES permit coverage for discharges of process wastewaters from mining, leaching and processing operations, including drilling operations. These permits typically contain both technology and water quality based effluent limits, sampling requirements, etc. NPDES regulations at 40 CFR Part 122.44(d) require that NPDES permits include effluent limits necessary to achieve water quality standards established under § 303 [33 U.S.C. 1313 - Water Quality Standards and Implementation Plans] of the federal Clean Water Act (CWA), including State narrative criteria for water quality. 40 CFR Part 122.4(i) requires that a discharge not “cause or contribute to the violation of water quality standards.” The New Mexico Water Quality Control Commission (WQCC) has adopted surface water quality standards under authority of the New Mexico Water Quality Act [Chapter 74, Article 6 NMSA] pursuant to CWA § 303, which are codified as *Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC*.

Regardless of whether or not an NPDES permit has been issued, state surface water quality standards must be met at all times and violation of these standards are enforced by the New Mexico Environment Department under authority of the New Mexico Water Quality Act.

Thank you for the opportunity to comment on this far reaching proposal. We applaud the desire of the NRC to look at the cumulative impact of proposed ISL facilities across the Western U.S. but ask you do not do so at the expense of in depth, site specific environmental impact analysis.

Sincerely,


Ron Curry
NMED Secretary